

REMARKS

Claims 1, 6-8, 16, 17, 24, 25 and 27 have been amended and claim 5 has been cancelled in a sincere effort to place the subject application in condition for allowance. Reconsideration in view of the following remarks is respectfully requested.

Section 112 Rejections

In section no. 1 of the Official Action, claims 7, 16 and 17 have been rejected under 35 USC §112 as being indefinite. Claim 7 as originally presented recited an “and/or” limitation. Claim 7 has been amended to change the term to “or.” Claims 16 and 17 as originally presented recited a limitation of “said data receiver” (singular) whereas there are plural data receivers in claim 1 from which claims 16 and 17 depend. Claims 16 and 17 have been amended to recite the limitation of “each of said data receivers” to be consistent with claim 1. Applicant submits that claims 7, 16 and 17 as amended are not indefinite.

In section no. 2 of the Official Action, claims 1-27 have been rejected under 35 USC §112 as being indefinite. The examiner asserts that the term “partially redundant” is indefinite, and that there is a antecedent basis problem with the latter use of the term “the redundant data items.” In accordance with the Examiner’s suggestion the limitation “at least partially” has been deleted from claims 1, 24, 25 and 27. It is submitted that the claims as amended are not indefinite.

Rejections Based on Corney (US 4,532,630)

In section no. 3 of the Official Action, claims 1-4, 16-18, and 24-26 have been rejected

under 35 USC §102 as anticipated by Corney. In section nos. 5 and 6 of the Official Action, dependent claims 15, and 20-23 have been rejected under 35 USC §103 as obvious over Corney in view of secondary references. It is respectfully submitted that these claims are allowable over Corney, and reconsideration is respectfully requested.

Claim 1 has been amended to include the subject matter of claim 5. Since claim 5 was not rejected as being anticipated by or obvious over Corney, it is submitted that claim 1 as amended is allowable over Corney. Further, all of the claims that are dependent from claim 1, including claims 2-4, 15-18 and 20-23 are allowable for the same reasons as claim 1, and for the additional features in combination that are recited in each of those claims.

Independent claim 24 has been amended for clarity. It is submitted that claim 24 is not anticipated by Corney for at least the following three reasons.

Claim 24 at lines 5-6 calls for “data receivers” for receiving the redundant data items and “combining them to an error tolerant data item”. The Examiner seems to interpret that the cited “data receivers” are formed in Corney by the combination of computing elements 29, 31, 33 and comparator 7. In particular, the Examiner states that comparator 5 “combines the data items”. However, Corney does not combine the data items “to an error tolerant data item” as claimed. As stated in col. 1, lines 39-50 of Corney, the comparators either isolate a failed channel, or they give warning, which is not the same as combining the data items to an error tolerant data item.

Claim 24, lines 11-13 states that “each data receiver is connected via separate receiver communication links to at least two outputs of the switching assembly”. As mentioned, the Examiner seems to interpret the comparator 7 to be part of the data receivers, hence the comparator

7 should be a “data receiver” connected to at least two outputs of the switching assembly, which it isn’t. It is connected the outputs of the computing elements 29, 31, 33, which are themselves “data receivers.”

Finally, and most importantly, the system of Corney differs greatly from what is stated in claim 24 at lines 15-20. In particular, the “data items” from the data sources of Corney are split up into low frequency data items and high frequency data items in the filters 11 to 21. In other words, part of the data items from the data sources passes through the low pass filters, while another part passes through the high pass filters. Now, when e.g., looking at computing element 29, which is (according to the Examiner) one of the data receivers of the claim, that data receiver has two “receiver communication links” as claimed, namely one to equalization unit 23 and the other to high pass filter 17. According to the last paragraph of the claim, the system is adapted to send “*every* data item ... through *every one* of the at least two receiver communication links”. In contrast to this, the data items attributed to low frequency never passes any of the high pass filters, and therefore will never pass through the link between filter 17 and computing element 29. Similarly, none of the data items attributed to high frequency will ever pass through the receiver communication link between equalization unit 23 and computing item 29. Hence, in contrast to what is claimed at lines 19-20 of claim 24, it is not true, for Corney, that a given data receiver “receives the same data item through at least two receiver communication links”. The two receiver communication links of a data receiver will always carry different data items, with one receiver communication link of each receiver carrying low frequency data items only, while the other is carrying high frequency data items only.

For the foregoing reasons, claim 24 is not anticipated by Corney. Further, it is

submitted that the differences noted above between the subject matter of claim 24 and Corney are substantial, that the cited references do not suggest or motivate modification of Corney to reach Applicant's claim 24, and that for the foregoing reasons claim 1 is non-obvious over Corney. It is submitted that claim 24 is allowable.

Claims 25-27 contain the same distinguishing features as claim 24 and thus are allowable for the same reasons as advanced relative to claim 24.

Rejections Based on Emmert et al (US 6,085,350)

In section no. 4 of the Official Action, independent claim 1 along with dependent claims 5-9, 19 and 21 have been rejected under 35 USC §102 as anticipated by Emmert et al. Applicant has amended claim 1 by combining the limitations of claim 1 with dependent claim 5. Further amendments have been made for the purpose of clarity and do not further limit the claim. Claim 5 has been cancelled as redundant. It is respectfully submitted that claim 1 as amended is not anticipated by Emmert et al for at least three reasons.

Claim 1, lines 5-6 states that the data receivers *combine the redundant data items to an error tolerant data item*. The Examiner interprets the "data receivers" to be the comparators 210 of Emmert et al. The purpose of each comparator 210 is to compare the output of one signal generator 105 to the output of one voter 315. Each of these outputs carry, admittedly, "redundant data items", but the comparator 210 merely generates a Boolean signal indicating if the two data items match. Such a Boolean signal changes in the presence of an error in one of the signals, and thus is not an "error tolerant data item" as claimed. Hence, it cannot be said that the comparators 210 (in the roles

of data receivers) combine the redundant data items to an error tolerant data item.

At lines 10-11 of claim 1 as amended, it is stated that “each data receiver is connected via separate receiver communication links to *at least two outputs*.” The term “output” has an antecedent basis in the claim, namely at the beginning of the fourth paragraph, as being an output of the “switching assembly”. To make this absolutely clear, claim 1 has been clarified at the end of the fourth paragraph by adding “of the switching assembly” after “outputs”. The Examiner states that Emmert et al. teaches each data receiver (comparator 210) is connected to at least two such outputs. As can be seen in Fig. 2, however, each comparator 210 is connected to exactly *one* output of the “switching assembly” (collective voters 300), namely through line 315. It is further connected to the output of one of the data sources (signal generators 105), but the output of a data source is not an “output” of the switching assembly as called for in claim 1.

In lines 22-23 of claim 1, it is stated that each switch communication link connects one output to one input. The terms “input” and “output” again refer to the input/output of the “switching assembly”. In claim 1 as amended, this has now been specified explicitly. In contrast to this, there are no “switch communication link” disclosed in Emmert et al that would connect an output of one voter 300 to an input of another voter 300.

Accordingly, for any one of the forgoing reasons, Emmert et al does not anticipate claim 1 as amended. Further, it is submitted that the differences noted above between the subject matter of claim 1 and Emmert et al, are substantial, that the cited references do not suggest or motivate modification of Emmert et al, to reach Applicant’s claim 1, that if Emmert et al, were to be modified in the manner claimed, such modification would render Emmert et al, inoperative, and that

for the foregoing reasons claim 1 is non-obvious over Emmert et al. It is submitted that claim 1 as amended is allowable.

All of the claims that depend from claim 1, including claims 5-9, 19 and 21, are allowable for the same reasons as advanced relative to claim 1 and for the additional features in combination that are recited in each of the dependent claims.

Rejection Based on Minto in view of Pittelkow et al.

In section no. 7 of the Official Action, claims 1, 10, 11 and 27 have been rejected over under 35 USC §103 as obvious over Minto in view of Pittelkow et al. It is respectfully submitted that these claims are allowable, and reconsideration is respectfully requested.

Claim 1 has been amended to include the subject matter of claim 5. Since claim 5 was not rejected as being obvious over Minto in view of Pittelkow et al, it is submitted that claim 1 as amended is allowable. Further, all of the claims that are dependent from claim 1, including claims 10 and 11 are allowable for the same reasons as claim 1, and for the additional features in combination that are recited in each of those claims.

Further, it is submitted that claim 27 is non-obvious over Minto in view of Pittelkow et al. Minor amendments have been made to claim 27 to clarify but not to limit the claim. According to the last paragraph of claim 27, in each time window the switching assembly connects *all receiver communication links* to the data source attributed to the time window while disconnecting the remaining data sources. To compare this feature to the device of Minto, we first have to define what Minto's receiver communication links are. According to the Official Action, the receiver

communication links are items 23 and 28 of Fig. 3. On the other hand, the Examiner has also identified items 23 and 28 to be part of the switching assembly. So, what exactly *are* the receiver communication links which, according to the first paragraph of the claim, are to connect each data receiver to at least two outputs of the switching assembly? At best, we could identify the lines extending from the switches in block 23 of Minto to the sensors 22a, 22b, 22n with the claimed receiver communication links. If that is true, there is no time window during which the switching assembly connects *all* receiver communication links to the data source attributed to the time window. The switches in block 23 are operated *consecutively*, i.e., only one per window.

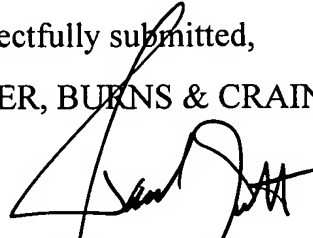
According to the Examiner, it would have been obvious to a person skilled in the art to have included the redundant links as taught by Pittelkow et al., in the invention of Minto. This would, according to the Examiner, have been obvious because inclusion of redundant links increases the fault tolerance of a system. We assume that the “redundant links” the Examiner talks about are the receiver communication links as claimed, the redundancy being expressed at lines 7-11 of claim 27, according to which each data receiver is connected via separate receiver communication links to at least two outputs of the switching assembly. Such a parallelism would make no sense for the “receiver communication links” connecting the switches of block 23 of Minto to the sensors 22a, 22b, 22n. The purpose of the switches is to consecutively connect *one* of the sensors to the sample system 21 for obtaining staggered measurements and control signals as shown in Fig. 5 of Minto. It is unclear how any redundancy could be achieved here. At best, a combination of Minto and Pittelkow et al would result in a device with redundant sample systems 21 – however, this would render Minto’s device, whose purpose is to control *one system*, useless.

For the reasons above set forth, it is submitted that all of the claims pending in the Application are now in condition for allowance. Reconsideration and allowance of the Application are earnestly solicited.

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300 South Wacker Drive, Suite 2500
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978

Respectfully submitted,
GREER, BURNS & CRAIN, LTD.

By:



Paul G. Juettner
Registration No. 30,270